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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,907	12/16/2005	Toshinori Sugihara	LB-1035-616	2364

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EXAMINER	
KIM, JAY C	
ART UNIT	PAPER NUMBER
2815	
MAIL DATE	DELIVERY MODE
04/28/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	Application No.	Applicant(s)	
	10/560,907	SUGIHARA ET AL.	
	Examiner	Art Unit	
	JAY C. KIM	2815	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 15 April 2011 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because

(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);

(b) ☐ They raise the issue of new matter (see NOTE below);

(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: *See Continuation Sheet*. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☐ Applicant's reply has overcome the following rejection(s): _____.

6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: *4-34*.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☒ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.

12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____

13. ☐ Other: _____.

/J.K./

/Jay C Kim/
Examiner, Art Unit 2815

Continuation of 3. NOTE: Declaration filed under Rule 132 will not be entered.

Continuation of 11. does NOT place the application in condition for allowance because:

Applicants argue that "even though, Vijayakumar is only one of a combination of prior art references used in rejecting claims 4 and 5, however, Vijayakumar was cited specifically for the teaching of an added hydrogen dopant, and neither Vijayakumar or any of the other references teaches the claimed limitation that the added hydrogen has a concentration chosen to control the threshold voltage", and that "moreover, unlike the Examiner's assertion, claim 4 does recite specifically a correlation between concentrations of intentionally added dopants and a threshold voltage, "said active layer includes said nitrogen and hydrogen as intentionally added dopants having concentrations so that a threshold voltage of a gate voltage of the semiconductor device, when a voltage between a drain and a source region is fixed at 10V, is controlled to be substantially in a range between 0V and 3 V", emphasis added". (1) Intention to "control a threshold voltage" of a transistor by adding nitrogen and hydrogen is not a patentable subject matter. (2) Kawasaki et al. in view of Goodman and further in view of Yan et al and further in view of Vijayakumar et al. and still further in view of Wager et al. disclose all the limitations of claims 4 and 5. (3) What Applicants suggest is that even though the combination of the references the Examiner cited teaches claimed inventions of claims 4 and 5, the combination of the references cannot be used to reject claims 4 and 5 because there is no explicit teaching of "controlling a threshold voltage" of a transistor using nitrogen and hydrogen in the cited references. (4) It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. See MPEP 2144.

Applicants argue that "the Examiner has not met his burden for providing a factual basis for his assertion that the cited prior art teaches intentionally adding nitrogen and hydrogen having concentrations so that the threshold voltage lies within the claimed range", and that "the fact that other parameters may also affect the threshold voltage is irrelevant, since neither Wager nor Vijayakumar teaches explicitly or implicitly that added nitrogen or hydrogen should be added in concentrations so that the threshold voltage is controlled, let alone be within the claimed range of 0V to 3V". (1) As stated above, intention to "control a threshold voltage" of a transistor is not a patentable subject matter. (2) The combination of the references the Examiner cited teaches claimed inventions of claims 4 and 5. (3) Rather, Applicants' arguments above may raise an enablement requirement issue under 35 USC 112, first paragraph, and an indefiniteness issue under 35 USC 112, second paragraph. (3) First, because Applicants did not specifically disclose or claim other critical parameters that affect the threshold voltage such as a channel layer thickness and a gate insulating layer thickness, the original disclosure may not be enabling to one of ordianry skill in the art because one of ordianry skill in the art would need to carry out experiments by controlling all the possible factors that can change the threshold voltage along with examining the optimal doping concentration of nitrogen and hydrogen (i.e. undue experimentation is required). (4) Second, one of ordinary skill in the art may not recognize metes and bounds of the claimed invention, because there are numerous factors that would affect the threshold voltage other than concentration of nitrogen or hydrogen. (5) In response to Applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicants argue that "first, even though Wager may teach a range for the threshold voltage within 1V-20V, however, the device of Wager is different than the claimed device, since Wager's device lacks a protective layer", that "the threshold voltage of a TFT having a protective layer is a lot different from that of a TFT without a protective layer, see p. 4 of Applicant's Response of November 11, 2010", that "it was the unexpected result of the inventors' work that showed that a TFT with a protective layer can have its threshold voltage within the practical range of 0V-3V, by controlling the concentrations of the nitrogen and hydrogen dopants", that "even though, controlling the threshold voltage of a field effect transistor may be well known in the art, the correlation between the concentrations of the intentionally added nitrogen and hydrogen and the claimed range for the threshold voltage in the claimed device with a cover was not known". These arguments are not convincing because of the following reasons. (1) In response to Applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). (2) Wager et al. reference was used to show that a threshold voltage is a critical device parameter of a transistor that should be controlled, not to incorporate the whole structure of Wager et al. into the structure of Kawasaki et al. in view of Goodman and further in view of Yan et al. and further in view of Vijayakumar et al. (3) If the presence of the protective layer is critical in controlling the threshold voltage of the transistor, then Applicants should also claim the material composition and material properties of the protective layer unless "Applicants can provide an evidence that any type of a protective layer would result in the same threshold voltage of the transistor". In other words, if a threshold voltage of a transisor changes due to a different material of the protective layer, then each different material would require a diferent concentration of nitrogen and hydrogen for a desired threshold voltage, which may further require undue experimentation. (4) Applicants' arguments above are based on an assumption that Wager et al.'s transistor is the final structure and no other layers are formed on the transistor disclsoed by Wager et al. This assumption is not convincing, especially when the tansistor disclosed by Wager et al. should be packaged with other semiconductor or dielectric elements. Also the assumption is not convincing, because Applicants suggest that Wager et al. would measure a threshold voltage of their transistor without a protective layer anyway knowing that the threshold voltage would change subsequently after packaging of the transistor.

Applicants argue that "again, Wager's device lacks a protective cover, so it cannot be compared with the inventive device of claim 4", that "moreover, the fact that the claimed range for the threshold may be associated with certain device parameters does not negate the fact that the concentrations of the added nitrogen and hydrogen cause the voltage threshold to lie in the claimed range of 0V to 3V (which is not taught or suggested by the cited prior art). These arguments are not convincing due to the following reasons. (1) See responses above regarding Wager et al. reference. (2) Wager et al. reference discloses a threshold voltage of about 1 to about 20 V, which overlaps the claimed threshold voltage.

Declaration filed April 15, 2011 will not be entered, because Applicants failed to provide a showing of good and sufficient reasons why the Declaration is necessary and was not earlier presented.